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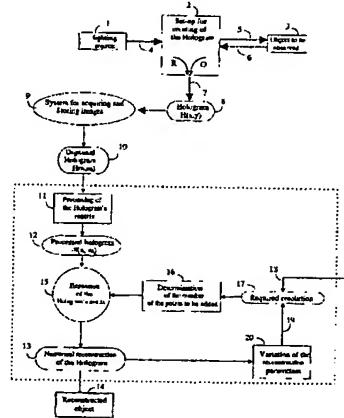
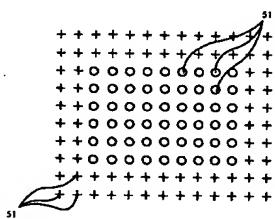
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(54) Title: **METHOD FOR MODIFYING SPATIAL RESOLUTION IN THE RECONSTRUCTION OF IMAGES IN DIGITAL HOLOGRAPHY**



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(57) Abstract: The invention concerns a method for the reconstruction of holographic images in digital holography, the holographic images being detected and transformed in a digitized hologram by an image detection device, the digitized hologram being made of an array having a number V_r of elementary pixels, the sizes of which being equal to the sampling intervals of the image detection device, the method comprising a first step of processing the digitized hologram array (e.g. zero-order elimination, aberration correction), and a second step of digitally reconstructing the complex object in an observation plane starting from the digitized hologram processed in the first step, the method being characterised in that the second step is carried out through discrete Fresnel Transform applied on an array of V_c pixels having sizes equal to that of said elementary pixels, wherein said array of V_c pixels (50, 51) includes said V_r pixels (51) and an integer number $p = V_c - V_r > 0$ constant values (50). The invention further concerns the instruments necessary to the execution of the method and the apparatus executing it.

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